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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/000,177

11/02/2001

Shinichi Terashima

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9514

26646

7590

04/03/2007

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EXAMINER

GRAYBILL, DAVID E

ART UNIT

PAPER NUMBER

2822

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/000,177

Applicant(s)

TERASHIMA ET AL.

Examiner

David E. Graybill

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 63, 64 and 67-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 63, 64 and 67-71 is/are rejected.
- 7) ☒ Claim(s) 63, 64 and 67-71 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claims 63, 64 and 67-71 are objected to because of the following informalities: The term "cobolt" appears to be a misspelling. Appropriate correction is required.

In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 63-65 and 67-71 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Eldridge (6727579).

At column 3, lines 12-24; column 16, line 63 to column 17, line 6; column 22, lines 7-11; column 28, line 65 to column 30, line 18; column 45, line 63 to column 57, line 15; column 60, line 63 to column 61, line 5; column 62, lines 10-46; column 100, line 44 to column 101, line 58; and column 132, line 43 to column 135, line 29, Eldridge discloses the following:

A semiconductor device, using a bonding material 792 for linking a semiconductor 791 terminal "bond pads" to a connecting terminal 793 for an outside circuit, characterized by reinforcing the bonding material and/or a joint between the semiconductor terminal and the connecting terminal with a reinforcing material "plating" comprising a metal coating covering the bonding material and/or joint and an inherent diffusion layer at an interface between the metal coating and the bonding material and/or joint, wherein the metal coating is a metal consisting essentially of one or more of "nickel," cobalt, chromium, platinum, palladium and tungsten; forming the connecting terminal using a substrate, a lead frame or a TAB tape; forming the semiconductor terminal on any one of a semiconductor chip, a substrate, a lead frame or a TAB tape.

A semiconductor device, using a bonding wire 792 for linking a semiconductor terminal to a connecting terminal for an outside circuit, characterized by reinforcing the bonding wire, either partially or wholly, with a reinforcing material comprising a metal coating covering the bonding wire,

a diffusion layer at an interface between the metal coating and the bonding wire, after bonding work; wherein the metal coating is a metal consisting essentially of one or more of "nickel," cobalt, chromium, platinum, palladium and tungsten; the bonding wire is fabricated from any one of "gold," copper, aluminum, silver and an alloy of any of these metals; wherein the bonding wire is gold or gold alloy and an outermost surface of the bonding wire has a gold concentration of 99% or less; coating semiconductor terminal, the connecting terminal and the bonding wire with resin; forming the connecting terminal using a substrate, a lead frame or a TAB tape.

To further clarify the disclosure of an inherent diffusion layer, Eldridge discloses a process of heating the substrate (hence the wire and the metal coating) to a temperature of up to 90 °C, and the diffusion layer inherently forms during this process. Indeed, applicant discloses that the diffusion layer inherently forms during a process of heating the wire and the metal coating to a temperature of up to 90 °C. In particular, in the instant specification, at page 17, line 32 to page 18, line 1; and page 23, lines 10-13 and 18-19, applicant discloses, "When wires are heated after reinforcing coating with a film of oxides, compounds, etc., diffusion takes place between the film and the metal material of the wires, which increases strength of the interface through the formation of an alloy film. A heat treatment at 50 °C. or higher will accelerate the diffusion," "The present invention does not

specify the method to form the diffusion layer. Heating the bonding joints after the coating, for instance, is effective for the purpose," and, "No specifically controlled atmosphere is required for the heating."

Applicant's remarks filed 1-8-8 have been fully considered and are adequately treated supra.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions relevant to the examination of the instant invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

For information on the status of this application applicant should check PAIR: Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alternatively, applicant may contact the File Information Unit at (703) 308-2733. Telephone status inquiries should not be directed to the examiner. See MPEP 1730VIC, MPEP 203.08 and MPEP 102.

Any other telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.
The fax phone number for group 2800 is (571) 273-8300.



David E. Graybill
Primary Examiner
Art Unit 2822

D.G.
29-Mar-07